

Remarks

This response is being filed to the outstanding office action dated February 06, 2004. Applicants wish to thank the examiner for allowing claims 9-18, 26-35 and 39-41 and allowing claims 7, 8, 24 and 25 if rewritten in independent form.

The applicants note that claims 1-6 and 19-21 were rejected under 35 U.S.C. 102(b) as being anticipated by Sid-Ahmed (5,621,470) and that claims 22-23, 36-38 were rejected under 35 U.S.C. 103 as being unpatentable in view of Sid-Ahmed.

Claim 1 requires adaptive filtering as do each of the independent claims 19, 20, 21, 22 and 36 (wherein smoothing and interpolating are forms of filtering). The applicants wish to point out that the term “adaptive filtering” is defined within the description and means that “the filter changes dependent upon a characteristic of the source image” as stated at page 6 lines 11-12. The application further states on page 6 that an example of adaptive filtering is a filter that changes depending upon the location of the data being filtered within the source image. Thus, an adaptive filter changes dependent upon a characteristic within the source material and is therefore a data-driven or content-driven filtering process.

The office action states that Sid-Ahmed discloses an adaptive interpolating filter as shown at col. 1 lines 56-62, col. 2 lines 53-57 and at col. 6 lines 14-25. The Applicant respectfully disagrees with this suggestion. The applicants wish to point out that at col. 6 lines 17-18 the filtering is described as “applying a 2-D filter for line and frame interpolation,” at lines 20-21 as “using a 1-D type filter for line interpolation” or at line 23-25 as “running the interpolator at a throughput frequency of 4 times the horizontal sampling frequency, and when using frame stores for frame replication.” The Sid-Ahmed

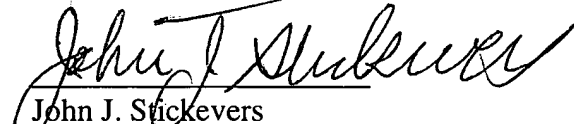
patent also mentions 3-D filtering at Col. 1 line 67 and again at Col.2, however nowhere does the reference state that the filters that are used are adaptive to a characteristic within the image data as defined in the specification.

The office action suggests that finite impulse response and infinite impulse response filters (IIR and FIR) are space variant approximations where the coefficients change from pixel to pixel in these filters and therefore, these filters are adaptive. Applicants respectfully disagree with both points. First, filters such as IIR and FIR filters have fixed coefficient values. A filter can be viewed as a black box that alters input data producing output data. The output data of such a filter varies from pixel to pixel, however the coefficients that are used to process the input data do not. The coefficient values of the equation defining an IIR filter or FIR filter do not vary from pixel to pixel within an image. The filter coefficient values are predetermined. As a result, IIR and FIR filters are not adaptive nor are they spatially-variant. If the Examiner still believes that the coefficients of such filters do vary from pixel to pixel, Applicants respectfully request that the Examiner present a reference supporting this teaching.

Since the Sid-Ahmed patent does not teach or suggest adaptive filtering, independent claims 1, 19, 20, 21, 22, and 36 are allowable. Similarly dependent claims 2-6 and 23, 37 and 38 are also allowable for at least the same reasons.

It is believed that a three month extension of time is required for this application. Enclosed please find a check in the amount of \$475. If any additional fees are required for the timely consideration of this application, please charge deposit account number 19-4972.

Respectfully submitted,


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